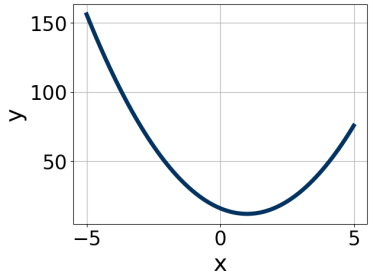
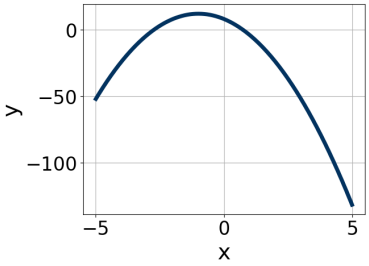
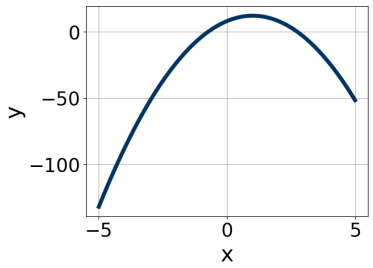
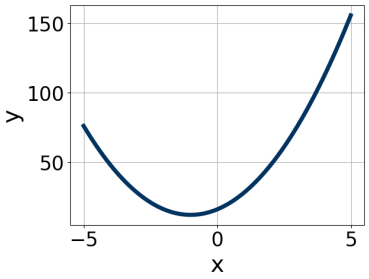
1. Graph the equation below.

$$f(x) = (x-1)^2 + 12$$

A. 

C. 

B. 

D. 

E. None of the above.

---

2. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-12x^2 - 9x + 2 = 0$$

A. $x_1 \in [-1.22, -0.45]$ and $x_2 \in [-0.98, 0.69]$

B. $x_1 \in [-14.11, -13.56]$ and $x_2 \in [12.66, 13.16]$

C. $x_1 \in [-0.3, 0.07]$ and $x_2 \in [0.71, 1.12]$

D. $x_1 \in [-2.35, -1.93]$ and $x_2 \in [10.81, 11.87]$

E. There are no Real solutions.

---

3. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$16x^2 - 40x + 25$$

A. $a \in [7.53, 9.57]$, $b \in [-14, -3]$, $c \in [1.77, 3.95]$, and $d \in [-8, -4]$

B. $a \in [1.91, 3.55]$, $b \in [-14, -3]$, $c \in [7.21, 9.2]$, and $d \in [-8, -4]$

C. $a \in [3.34, 5.88]$, $b \in [-14, -3]$, $c \in [3.86, 4.01]$, and $d \in [-8, -4]$

D. $a \in [0.64, 1.35]$, $b \in [-24, -19]$, $c \in [0.53, 1.17]$, and $d \in [-23, -16]$

E. None of the above.

---

4. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 + 60x + 36 = 0$$

A. $x_1 \in [-6.81, -5.76]$ and $x_2 \in [-0.36, 0.06]$

B. $x_1 \in [-30.51, -28.26]$ and $x_2 \in [-30.28, -29.95]$

C. $x_1 \in [-3.92, -3.48]$ and $x_2 \in [-0.47, -0.38]$

D. $x_1 \in [-2.6, -2.14]$ and $x_2 \in [-0.95, -0.45]$

E. $x_1 \in [-2.12, 0.44]$ and $x_2 \in [-1.65, -1.18]$

---

5. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$19x^2 + 11x - 9 = 0$$

A. $x_1 \in [-20.03, -19.59]$ and $x_2 \in [7.1, 8.8]$

B. $x_1 \in [-29.09, -27.92]$ and $x_2 \in [26.9, 28.8]$

C. $x_1 \in [-1.26, -0.72]$ and $x_2 \in [-2, 0.9]$

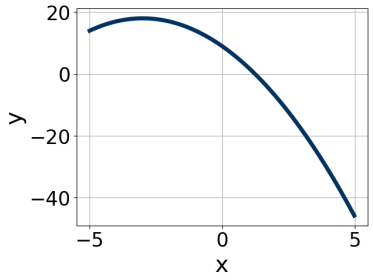
D. $x_1 \in [-0.89, -0.22]$ and $x_2 \in [0.8, 1.3]$

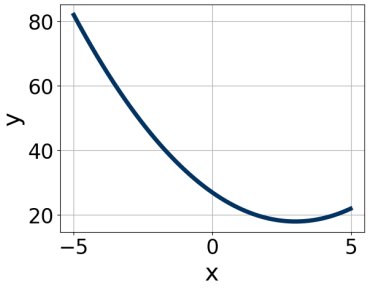
E. There are no Real solutions.

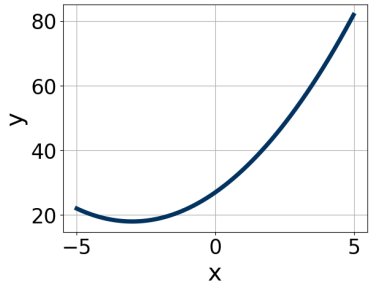
---

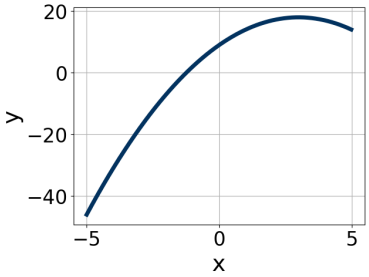
6. Graph the equation below.

$$f(x) = (x+3)^2 + 18$$

A. 

C. 

B. 

D. 

E. None of the above.

---

7. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$10x^2 - 33x - 54 = 0$$

A. $x_1 \in [-2.15, -1.09]$ and $x_2 \in [4.46, 5.37]$

B. $x_1 \in [-0.69, -0.37]$ and $x_2 \in [12.39, 13.71]$

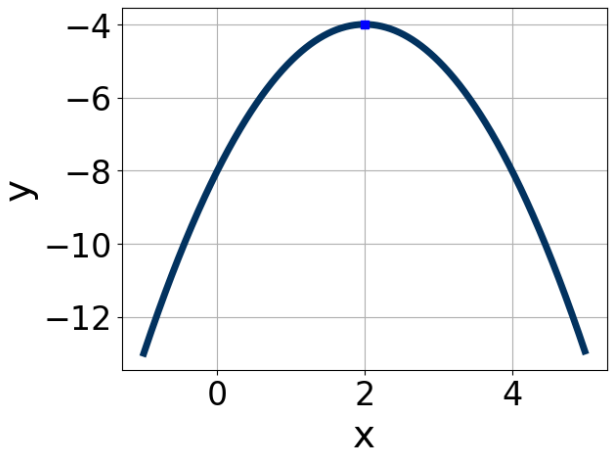
C. $x_1 \in [-2.66, -1.74]$ and $x_2 \in [1.04, 3.51]$

D. $x_1 \in [-6.77, -5.51]$ and $x_2 \in [-1.09, 2.11]$

E. $x_1 \in [-12.07, -11.74]$ and $x_2 \in [44.34, 46.23]$

---

8. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [1, 2]$, $b \in [-5, -1]$, and $c \in [-2, 3]$

B. $a \in [-3, 0]$, $b \in [-5, -1]$, and $c \in [-8, -3]$

C. $a \in [1, 2]$, $b \in [3, 6]$, and $c \in [-2, 3]$

D. $a \in [-3, 0]$, $b \in [3, 6]$, and $c \in [-8, -3]$

E. $a \in [-3, 0]$, $b \in [-5, -1]$, and $c \in [-2, 3]$

---

9. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$36x^2 - 60x + 25$$

A. $a \in [3, 5]$, $b \in [-11, 1]$, $c \in [11.52, 12.36]$, and $d \in [-9, 1]$

B. $a \in [-2, 2]$, $b \in [-36, -29]$, $c \in [0.92, 1.31]$, and $d \in [-36, -22]$

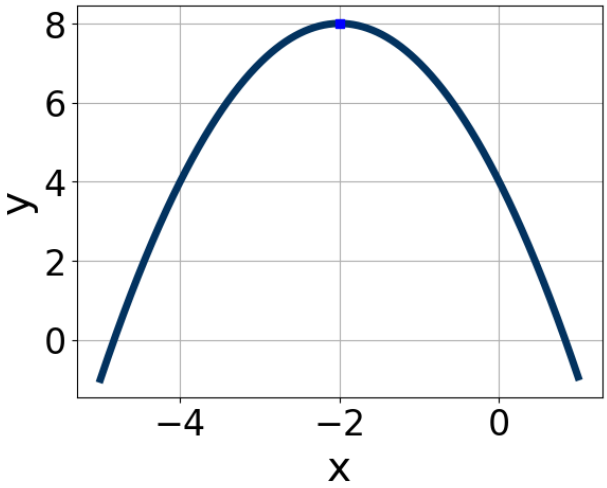
C. $a \in [9, 19]$, $b \in [-11, 1]$, $c \in [2.88, 3.42]$, and $d \in [-9, 1]$

D. $a \in [4, 7]$, $b \in [-11, 1]$, $c \in [5.85, 6.18]$, and $d \in [-9, 1]$

E. None of the above.

---

10. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [1, 2]$, $b \in [-4, -1]$, and $c \in [10, 15]$

B. $a \in [-1, 0]$, $b \in [-4, -1]$, and $c \in [3, 7]$

C. $a \in [1, 2]$, $b \in [4, 8]$, and $c \in [10, 15]$

D. $a \in [-1, 0]$, $b \in [4, 8]$, and $c \in [3, 7]$

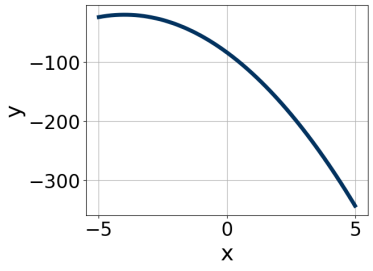
E. $a \in [-1, 0]$, $b \in [4, 8]$, and $c \in [-13, -10]$

---

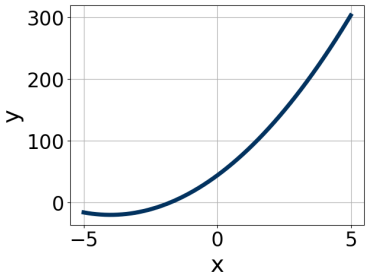
11. Graph the equation below.

$$f(x) = -(x + 4)^2 - 20$$

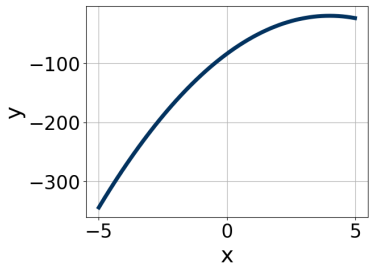
A.



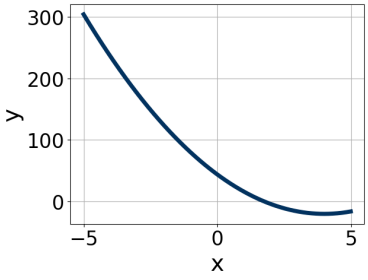
C.



B.



D.



E. None of the above.

---

12. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$14x^2 + 15x - 6 = 0$$

A. $x_1 \in [-1, -0.1]$ and $x_2 \in [0.68, 1.66]$

B. $x_1 \in [-21, -17.8]$ and $x_2 \in [3.87, 5.42]$

C. $x_1 \in [-3.1, -0.7]$ and $x_2 \in [0.2, 0.53]$

D. $x_1 \in [-24.9, -22.7]$ and $x_2 \in [22.4, 24.39]$

E. There are no Real solutions.

---

13. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$36x^2 - 60x + 25$$

A. $a \in [0.76, 1.62]$, $b \in [-31, -28]$, $c \in [0.3, 1.7]$, and $d \in [-32, -28]$

B. $a \in [1.55, 2.31]$, $b \in [-14, -3]$, $c \in [17.2, 20.8]$, and $d \in [-10, -2]$

C. $a \in [4.65, 6.7]$, $b \in [-14, -3]$, $c \in [5.4, 8.8]$, and $d \in [-10, -2]$

D. $a \in [16.99, 19.36]$, $b \in [-14, -3]$, $c \in [1.1, 4.2]$, and $d \in [-10, -2]$

E. None of the above.

---

14. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$15x^2 + 7x - 36 = 0$$

A. $x_1 \in [-7.9, -2.9]$ and $x_2 \in [0.34, 0.74]$

B. $x_1 \in [-2.9, -1.3]$ and $x_2 \in [0.97, 1.74]$

C. $x_1 \in [-10.2, -8.1]$ and $x_2 \in [-0.01, 0.28]$

D. $x_1 \in [-1, -0.7]$ and $x_2 \in [2.3, 3.12]$

E. $x_1 \in [-30.5, -24.2]$ and $x_2 \in [19.66, 20.07]$

---

15. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-14x^2 + 7x + 6 = 0$$

A. $x_1 \in [-0.88, -0.16]$ and $x_2 \in [0.78, 1]$

B. $x_1 \in [-19.54, -19.21]$ and $x_2 \in [19.4, 20.44]$

C. $x_1 \in [-0.96, -0.86]$ and $x_2 \in [0.33, 0.55]$

D. $x_1 \in [-13.63, -13.3]$ and $x_2 \in [6, 7.07]$

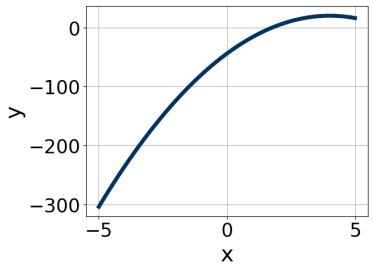
E. There are no Real solutions.

---

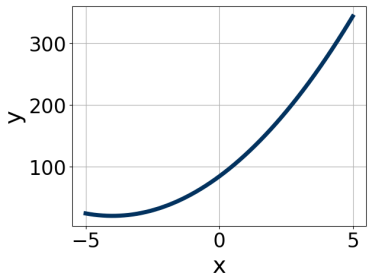
16. Graph the equation below.

$$f(x) = -(x-4)^2 + 20$$

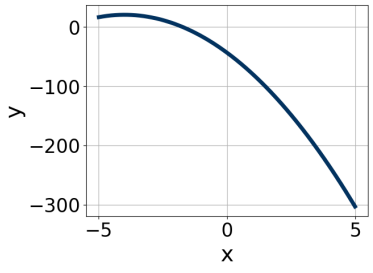
A.



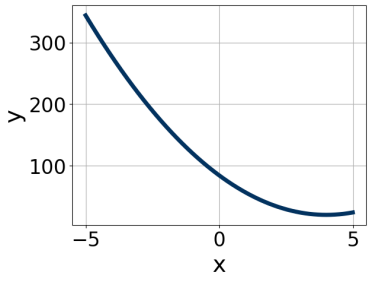
C.



B.



D.



E. None of the above.

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17. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$10x^2 - 57x + 54 = 0$$

A. $x_1 \in [-0.02, 0.46]$ and $x_2 \in [13.49, 13.9]$

B. $x_1 \in [11.96, 12.04]$ and $x_2 \in [44.69, 45.36]$

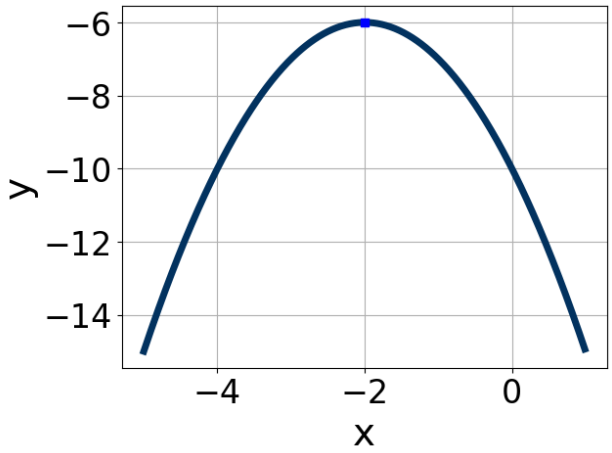
C. $x_1 \in [1.31, 1.77]$ and $x_2 \in [3.54, 4]$

D. $x_1 \in [1.07, 1.26]$ and $x_2 \in [4.47, 5.13]$

E. $x_1 \in [0.85, 1]$ and $x_2 \in [5.67, 7.13]$

---

18. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-1.8, 0.1]$, $b \in [3, 8]$, and $c \in [-1, 4]$

B. $a \in [-1.8, 0.1]$, $b \in [-5, -3]$, and $c \in [-13, -7]$

C. $a \in [-0.7, 1.6]$, $b \in [3, 8]$, and $c \in [-3, 1]$

D. $a \in [-1.8, 0.1]$, $b \in [3, 8]$, and $c \in [-13, -7]$

E. $a \in [-0.7, 1.6]$, $b \in [-5, -3]$, and $c \in [-3, 1]$

19. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$54x^2 + 15x - 25$$

A. $a \in [7.5, 11.6]$, $b \in [-5, 2]$, $c \in [6, 11]$, and $d \in [-1, 15]$

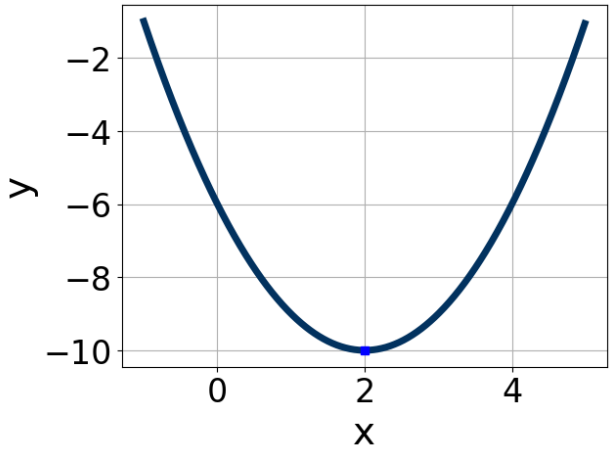
B. $a \in [2.6, 4.5]$, $b \in [-5, 2]$, $c \in [13, 20]$, and $d \in [-1, 15]$

C. $a \in [14.7, 19.6]$, $b \in [-5, 2]$, $c \in [3, 5]$, and $d \in [-1, 15]$

D. $a \in [-0.9, 1.2]$, $b \in [-33, -27]$, $c \in [0, 2]$, and $d \in [44, 52]$

E. None of the above.

20. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-1, 0]$, $b \in [-4, -2]$, and $c \in [-14, -11]$

B. $a \in [1, 3]$, $b \in [4, 5]$, and $c \in [10, 16]$

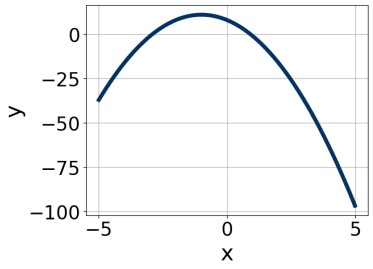
C. $a \in [1, 3]$, $b \in [-4, -2]$, and $c \in [-8, -5]$

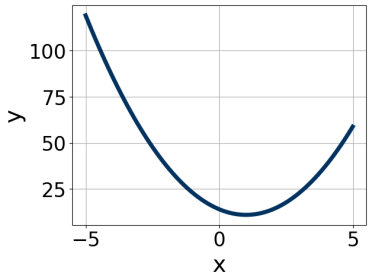
D. $a \in [1, 3]$, $b \in [4, 5]$, and $c \in [-8, -5]$

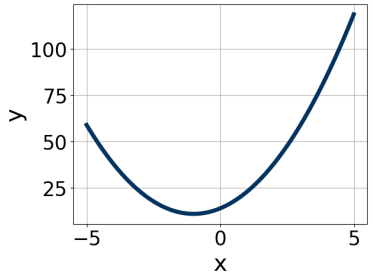
E. $a \in [-1, 0]$, $b \in [4, 5]$, and $c \in [-14, -11]$

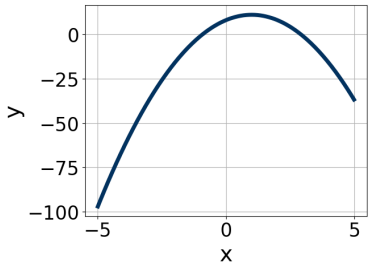
21. Graph the equation below.

$$f(x) = -(x-1)^2 + 11$$

A. 

C. 

B. 

D. 

E. None of the above.

---

22. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$10x^2 - 13x + 2 = 0$$

A. $x_1 \in [-1.4, -0.1]$ and $x_2 \in [-0.18, 0.82]$

B. $x_1 \in [1.4, 2.4]$ and $x_2 \in [10.22, 12.22]$

C. $x_1 \in [-1.1, 1.2]$ and $x_2 \in [1.12, 6.12]$

D. $x_1 \in [-9, -8.5]$ and $x_2 \in [8.08, 11.08]$

E. There are no Real solutions.

---

23. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$81x^2 + 90x + 25$$

A. $a \in [-6, 2]$, $b \in [41, 49]$, $c \in [-0.4, 2.6]$, and $d \in [41, 52]$

B. $a \in [9, 10]$, $b \in [5, 9]$, $c \in [6.2, 12.3]$, and $d \in [0, 10]$

C. $a \in [22, 29]$, $b \in [5, 9]$, $c \in [1.7, 5]$, and $d \in [0, 10]$

D. $a \in [3, 7]$, $b \in [5, 9]$, $c \in [26.6, 27.5]$, and $d \in [0, 10]$

E. None of the above.

---

24. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 + 25x - 36 = 0$$

A. $x_1 \in [-0.71, -0.32]$ and $x_2 \in [2.39, 2.41]$

B. $x_1 \in [-45.74, -44.28]$ and $x_2 \in [19.97, 20.18]$

C. $x_1 \in [-9.57, -7.92]$ and $x_2 \in [0.04, 0.25]$

D. $x_1 \in [-2.53, -1.43]$ and $x_2 \in [0.75, 0.81]$

E. $x_1 \in [-4.18, -3.5]$ and $x_2 \in [0.26, 0.64]$

---

25. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$11x^2 - 12x + 3 = 0$$

A. $x_1 \in [0.31, 0.51]$ and $x_2 \in [0.1, 0.8]$

B. $x_1 \in [3.88, 4.32]$ and $x_2 \in [6.8, 8]$

C. $x_1 \in [-3.3, -2.62]$ and $x_2 \in [2.1, 4.3]$

D. $x_1 \in [-1.63, 0.2]$ and $x_2 \in [-0.9, 0.2]$

E. There are no Real solutions.

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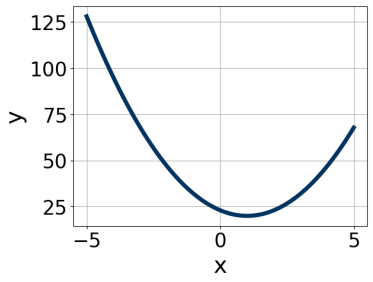
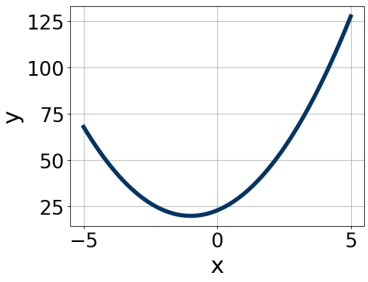
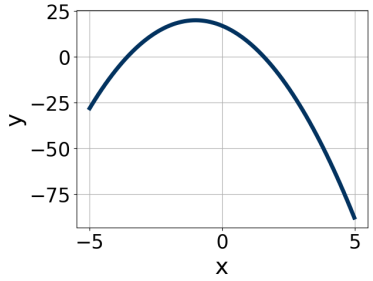
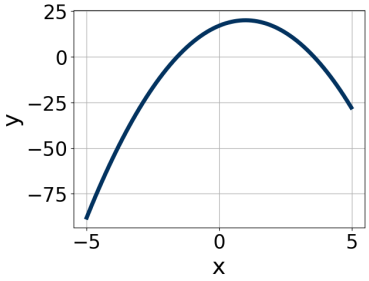
26. Graph the equation below.

$$f(x) = -(x + 1)^2 + 20$$

A. 

C. 

B. 

D. 

E. None of the above.

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27. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 - 50x + 24 = 0$$

A. $x_1 \in [0.18, 0.28]$ and $x_2 \in [3.53, 4.07]$

B. $x_1 \in [0.62, 0.83]$ and $x_2 \in [0.84, 1.28]$

C. $x_1 \in [19.98, 20.03]$ and $x_2 \in [29.73, 30.11]$

D. $x_1 \in [0.55, 0.73]$ and $x_2 \in [1.47, 2.23]$

E. $x_1 \in [0.33, 0.55]$ and $x_2 \in [1.9, 2.69]$

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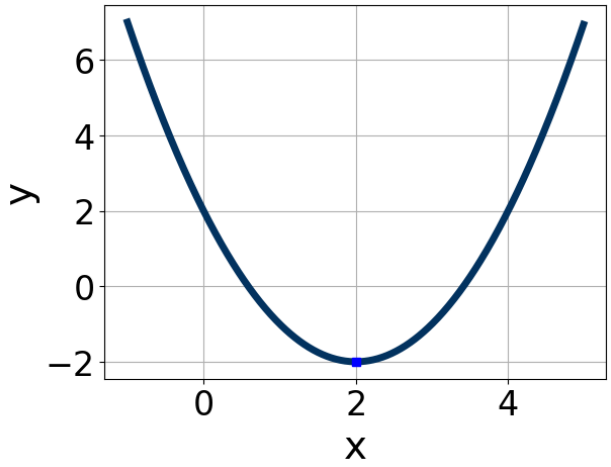
28. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-1, 0]$, $b \in [4, 7]$, and $c \in [-7, -4]$

B. $a \in [0, 5]$, $b \in [4, 7]$, and $c \in [0, 4]$

C. $a \in [0, 5]$, $b \in [4, 7]$, and $c \in [4, 8]$

D. $a \in [0, 5]$, $b \in [-4, -3]$, and $c \in [0, 4]$

E. $a \in [-1, 0]$, $b \in [-4, -3]$, and $c \in [-7, -4]$

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29. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$54x^2 - 69x + 20$$

A. $a \in [5.94, 7.72]$, $b \in [-5, -3]$, $c \in [5, 13]$, and $d \in [-6, -3]$

B. $a \in [0.23, 1.4]$, $b \in [-49, -43]$, $c \in [1, 3]$, and $d \in [-24, -23]$

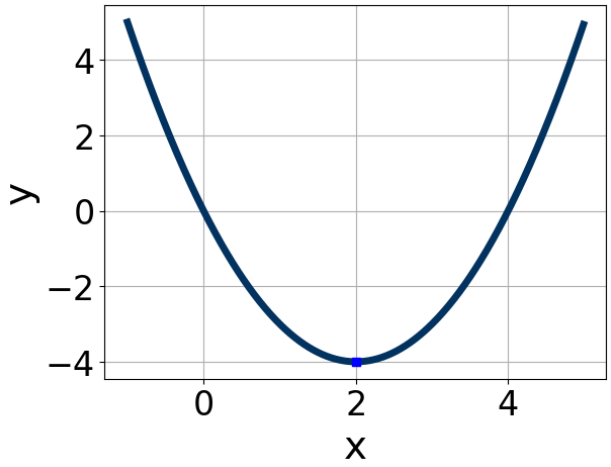
C. $a \in [1.09, 2.11]$, $b \in [-5, -3]$, $c \in [27, 28]$, and $d \in [-6, -3]$

D. $a \in [11.78, 12.62]$, $b \in [-5, -3]$, $c \in [3, 6]$, and $d \in [-6, -3]$

E. None of the above.

---

30. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [0.5, 2.3]$, $b \in [2, 6]$, and $c \in [-1, 1]$

B. $a \in [-1.2, 0.5]$, $b \in [2, 6]$, and $c \in [-8, -5]$

C. $a \in [-1.2, 0.5]$, $b \in [-7, 0]$, and $c \in [-8, -5]$

D. $a \in [0.5, 2.3]$, $b \in [-7, 0]$, and $c \in [-1, 1]$

E. $a \in [0.5, 2.3]$, $b \in [2, 6]$, and $c \in [8, 10]$
